In re Application of GOLDS et al.
Serial No. 09/768,098

REMARKS

The Office action has been carefully considered. The Office action explicitly rejected claims 24 and 25 under §101 as being directed to non-statutory subject matter and tacitly rejected claims 21-23 and 25 for related reasons under §112, second paragraph. Further, the Office action rejected claims 1-25 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,782,531 to Young ("Young"). Applicants respectfully disagree.

The claims amended herein have been amended for clarification and not in view of the prior art. Applicants submit that the claims as filed were patentable over the prior art of record, and that the amendments herein are for purposes of clarifying the claims and/or for expediting allowance of the claims and not for reasons related to patentability. Reconsideration is respectfully requested.

Applicants thank the Examiner for the interview held (by telephone) on June 20, 2006. During the interview, the Examiner and applicants' attorney discussed the claims with respect to the prior art. The essence of applicants' position is incorporated in the remarks below.

Prior to discussing reasons why applicants believe that the claims in this application are clearly allowable in view of the teachings of the cited and applied references, a brief description of the present invention is presented.

The present invention is directed to a system and method for ordering software modules in a persistent order for execution. To this end, the present invention provides a mechanism whereby unique numeric values may be statically assigned to software modules at the time that each of the software modules (*e.g.*,

filter drivers) may be developed. Each module's assigned numeric value may determine its position relative to other modules in a stack or other ordered configuration, *e.g.*, an order for calling the modules or passing data through the modules. In this manner, the order for any given set of filter drivers may be fixed, eliminating bugs and other problems that result from alternative orderings, and also significantly simplifying testing.

In one implementation, this static value (sometimes referred to as an "altitude" because stacks are typically represented vertically) may comprise a precision floating-point number. As a result, when new software modules may be developed, each module may (in an existing execution order) be assigned a number that will enable that software module to be positioned between any two existing software modules, since between any two real numbers there exists an infinite number of other real numbers. By way of example, if altitudes such as 0.1 and 0.2 are assigned to filter drivers A and C, if some filter driver B is developed that needs to be ordered between A and C, there exists an unused altitude available between A and C that can be assigned to B, *e.g.*, 0.15. If some other filter needed to attach between B and C, there will always be an unused altitude between B and C (*e.g.*, 0.18) that is available.

When applied to filter drivers, the drivers may be generally classified according to their type, *e.g.*, (antivirus, quota, encryption), as it is already known where such classes should approximately attach. For example, if altitudes are assigned values in the range from 0.0 to 1.0, where higher values attach closer to the base file system (*e.g.*, NTFS), antivirus products may be assigned an altitude in

the 0.2 to 0.3 range, quota drivers between 0.4 and 0.6, and encryption filters between 0.7 and 0.8. Moreover, drivers of the same type may also be ordered among one another within their general range, which may guarantee only one possible ordering in both testing and actual operation. Note that the above description is for example and informational purposes only, and should not be used to interpret the claims, which are discussed below.

§101 and §112 Rejections

The Office action rejected claims 24-25 as being directed to non-statutory subject matter. Further, the Office action rejected claims 21-23 and 25 as being indefinite. More specifically, the Office action contends that claim 24 is directed to a method that may simply be carried out in one's mind. The Office action also contends that claims 21-23 and 25 are directed to a computer-readable medium and suggests that the specification imparts an interpretation on the term computer-readable medium as a modulated signal or carrier wave that makes claims 21-23 and 25 non-statutory. Applicants respectfully disagree.

As presented in a previous Office action. Section 2106(IV)(B)(1)(a) of the MPEP states that functional descriptive material that is recorded on some computer-readable medium is structurally and functionally interrelated to the medium and is statutory since use of technology permits the function of the descriptive material to be realized. See *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *In re*

Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim). Carrier waves and modulated signals are examples of data that may be interpreted by a computer (*i.e.*, a computer-readable medium) and may also be considered a product-by-process which is also statutory *per se* if the underlying process is statutory. Furthermore, the MPEP specifically states (section 2106(IV)(B)(1)(c)) that a signal claim directed to a practical application is statutory regardless of its transitory nature. *See O'Reilly*, 56 U.S. at 114-19; *In re Breslow*, 616 F.2d 516, 519-21, 205 USPQ 221, 225-26 (CCPA 1980). Recent court decisions have also held that "signals" are proper statutory subject matter. See *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*, 958 F.2d 1053, 22 USPQ.2d 1033 (CCPA 1992) (wherein the court held as incorrect the view that "signals" are improper statutory subject matter simply because there may be nothing necessarily physical about "signals" and held that computer-program related inventions can be claimed in terms of "signals" because computers operate according to signals. In fact, anything that is being manipulated or transformed can typically be drafted in terms of "signals").

Notwithstanding this, claims 21, 24, and 25 have been amended to recite an execution step or a computer-readable storage medium including, for example, when any signal may be loaded into a memory. Certainly a computer-readable storage medium, *e.g.*, a memory, a computer disk, *etc.* is statutory subject matter. For at least these reasons, applicant requests that the §101 and §112 rejections of claims 21-25 be withdrawn.

§103 Rejections

Turning to the rejections on the art, amended claim 1 generally recites in a computer system, a method, comprising maintaining static assigned numeric values in association with software modules, each software module having a static assigned numeric value, the assigned numeric values having a relative order and there being an unassigned numeric value between every two assigned numeric values, and executing the software modules in an order determined by each of the assigned numeric values, the order being deterministic and static.

The Office action rejected claim 1 as being unpatentable over Young. More specifically, the Office action contends that Young teaches maintaining assigned values in association with software modules, each software module having an assigned value. Further, the Office action contends that Young teaches the assigned values having a relative order, and executing the software modules in an order determined by each of the assigned values. Column 13, lines 15-64 of Young is referenced.

The Office action concludes that it would be obvious to one skilled in the art at the time of the invention to combine the teachings of Young with the general knowledge available at the time to arrive at the recitations of claim 1 because there exists an order for executing plug-ins in a specific order according to the number of dependencies as taught by Young. Applicants respectfully disagree.

To establish *prima facie* obviousness of a claimed invention, all of the claim recitations must be taught or suggested by the prior art; (*In re Royka*, 490 F.2d

981, 180 USPQ 580 (CCPA 1974)), and "all words in a claim must be considered in judging the patentability of that claim against the prior art;" (*In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). Further, if prior art, in any material respect teaches away from the claimed invention, the art cannot be used to support an obviousness rejection. *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed Cir. 1997). Moreover, if a modification would render a reference unsatisfactory for its intended purpose, the suggested modification / combination is impermissible. See MPEP § 2143.01

Applicants submit that the Office action has failed to establish a *prima facie* case for obviousness. Young is directed, generally, toward a system and method for controlling the execution of multiple plug-ins that may be dependent upon each other. In specific, each plug-in is associated with an integer-based counter that is indicative of the number of other plug-ins in which it is dependent. As dependent plug-ins are executed, the counter decrements accordingly. Thus, plug-ins will only be executed when its respective counter reaches zero indicating that the current plug-in is no longer waiting for a previous plug-in to execute. In this manner, the system of Young can ensure that no plug-in is executed before any other plug-ins to which it is dependent.

The Office action contends that the integer-based counter associated with each plug-in in Young is the same as static assigned numeric values in association with software modules as recited in claim 1. This is erroneous as static assigned values (e.g., that may be floating point/real numbers) are static; they are not integer values nor are they dynamically decremented. Quite differently, a counter, as

defined by Young, indicates a dynamic integer number representative of how many other plug-ins remain to be executed for dependency reasons. In the present invention, the assigned value may be any static number and clearly is not just limited to integers. This is particularly advantageous as additional plug-ins may be inserted in an execution order anywhere. For example, if a first software module is associated with the static assigned value of 1 and a second software module is associated with the static assigned value of 2, a third software module may be assigned a static value of 1.5 (which is not an integer) indicating that the third software module is to be executed after the first but before the second. Having a dynamic, decrementing counter of integers does not allow for this kind of flexibility in ordering the execution of software modules.

Furthermore, claim 1 recites the assigned values having a relative order and there being an unassigned value between every two assigned numeric values. Young does not teach assigning non-integer numeric values to software modules as discussed above. As such, there exists two assigned values, such as 1 and 2, wherein there does not exist an assignable numeric value between 1 and 2 (*i.e.*, there are no integers between 1 and 2). Young simply does not teach an unassigned value between every two assigned values among static assigned values for software modules as recited in claim 1.

Additionally, each assigned value associated with each of the software modules is static. That is, once assigned, the value remains the same. In Young, however, the counter value decrements (*i.e.*, is not static, but rather dynamic) as

specific dependency-related plug-ins are executed. A decrementing counter value cannot be construed to be a static value as recited in claim 1.

Further yet, the Office action has clearly used impermissible hindsight reasoning as a basis for establishing an obviousness argument. Without applicants' teachings, applicants submit that no one of skill in the art reading Young would have reasonably contemplated modifying the concept of a dynamically decremented integer counter associated with plug-ins in some manner that accomplished a deterministic and predictable order for execution of software modules. As a matter of law, obviousness may not be established using hindsight obtained in view of the teachings or suggestions of the applicants. *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 1553, 220 USPQ 303, 311, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

To guard against the use of such impermissible hindsight, obviousness needs to be determined by ascertaining whether the applicable prior art contains any suggestion or motivation for making the modifications in the design of the prior art article in order to produce the claimed design. The mere possibility that a prior art teaching could be modified or combined such that its use would lead to the particular limitations recited in a claim does not make the recited limitation obvious, unless the prior art suggests the desirability of such a modification. See *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). There simply is no such reasonable motivation found in the prior art of record or elsewhere.

For at least these reasons, applicants submit that claim 1 is patentable over the prior art of record.

Claims 2-10 were rejected as unpatentable over Young. Applicants respectfully submit that dependent claims 2-10, by similar analysis, are allowable. Each of these claims depends either directly or indirectly from claim 1 and consequently includes the recitations of independent claim 1. As discussed above, Young, whether considered alone or in any permissible combination with any other prior art of record, fails to teach or suggest the recitations of claim 1 and therefore dependent claims 2-10 are also allowable over the prior art of record. In addition to the recitations of claim 1 noted above, each of these dependent claims includes additional patentable elements.

For example, claim 6 generally recites that executing the software modules in an order determined by each of the assigned numeric values includes maintaining an order. Young cannot be construed to maintain a specific order as two plug-ins that may be dependent on the same (third) plug-in will simply execute after the third plug-in has been executed. However, there is no deterministic way to identify which of these two dependent plug-ins will execute first. On one pass, it may the first and on a second pass, it may be the second. Thus, the order is, in fact, not maintained. For at least this additional reason, applicants submit that claim 6 is allowable over the prior art of record.

Further yet, applicants submit that the Office action's motivation for contending obviousness is flawed. The Office action essentially concludes that the teachings of Young make the claims obvious because of the use of Young's counters; in other words, the motivation for the present invention is to somehow use Young's counters. This circular reasoning is overly broad and improperly

conclusive. Such broad, conclusory statements do not come close to adequately addressing the issue of motivation to combine, are not evidence of obviousness, and therefore are improper as a matter of law. *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). In short, Young, whether considered individually or in any combination with each other or any other prior art of record, do not teach or suggest the limitations of the claims.

Applicants also disagree with each Official Notice taken, as each appear to be nothing more than a conjecture based purely on impermissible hindsight. Accordingly, applicants respectfully request withdrawal of the rejection of any and all claims 26, 30 and 31 based on Official Notice, or specifically request that a reference or references (including the required motivation to combine) be provided demonstrating otherwise. See M.P.E.P. § 2144.03.

Turning to the next independent claim, amended claim 11 generally recites in a computer system, a mechanism comprising a plurality of software modules, each software module having a static assigned numeric value indicative of a relative order, there being an unassigned value between every two assigned values, and an ordering mechanism configured to evaluate each static assigned numeric value and to arrange the software modules for execution in a relative order determined by the assigned numeric values, the order being deterministic and static.

The Office action rejected claim 11 as being unpatentable over Young. More specifically, the Office action contends that Young teaches and/or suggests

the recitations of claim 11 and cites the rejection of claim 1 as a basis for references to Young. Applicants respectfully disagree.

Applicants submit that the Office action has failed to establish a *prima facie* case for obviousness. As discussed above, Young is directed to a system and method that utilizes decremented integer counters to indicate when plug-ins should be executed relative to other dependent plug-ins. In fact, Young teaches integer-based counters that are limited to expressing deterministic orders of execution in terms of integers. As a result, there are times when two plug-ins are only separated by a single integer such that there is no way to deterministically execute an additional plug-in between these two. Advantageously, the system of claim 11 includes a plurality of software modules wherein each software module has a static assigned numeric value indicative of a relative order such that there is an unassigned value between every two assigned values. This allows additional software modules to be executed in any deterministic order according to the static assigned values. Young simply does not teach that between every two assigned values there is an unassigned value.

Additionally, each assigned value associated with each of the software modules is static. That is, once assigned, the value remains the same. In Young, the counter value decrements (*i.e.*, is not static, but rather dynamic) as specific dependency-related plug-ins are executed. A decrementing counter cannot be construed to be a static value as recited in claim 11.

Applicants respectfully submit that dependent claims 12- 20, by similar analysis, are allowable. Each of these claims depends either directly or indirectly

from claim 11 and consequently includes the recitations of independent claim 11. As discussed above, Young fails to teach or suggest the recitations of claim 11 and therefore these claims are also allowable over the prior art of record. In addition to the recitations of claim 11 noted above, each of these dependent claims includes additional patentable elements.

For example, claim 20 recites the mechanism of claim 11 wherein each assigned numeric value is unique to particular software modules. The Office action provides no reference as to what section of Young teaches this. This is likely because Young does not teach that each assigned value is unique. There exist many examples in Young wherein several plug-ins are dependent on one single plug-in. Thus, each of these plug-ins would be associated with the integer 1 assigned to its counter indicating the single dependency. Having an assigned value of 1 for several plug-ins is simply not a unique value for each plug-in. For at least this additional reason, applicants submit that claim 13 is allowable over the prior art of record.

Turning to the next independent claim, amended claim 21 recites a computer-readable storage medium having computer-executable instructions, comprising maintaining static assigned values in association with filter drivers, each filter driver having an assigned value, the assigned values having a relative order and there being an unassigned value between every two assigned values, and executing the filter drivers in an order determined by each of the assigned values, the order being deterministic and static.

The Office action rejected claim 21 as being unpatentable over Young. More specifically, the Office action contends that Young teaches and/or suggests the recitations of claim 21 and cites the rejection of claim 1 as a basis for references to Young. Applicants respectfully disagree.

Applicants submit that the Office action has failed to establish a *prima facie* case for obviousness. Unlike Young, claim 21 recites the assigned values having a relative order and there being an unassigned value between every two assigned values. As clearly pointed out above, Young does not teach this concept as an integer-based counter cannot be construed as having an unassigned value between every two assigned values. Further, the counters in Young may be decremented and this cannot be construed as static as also recited in claim 21.

For at least these reasons, applicants submit that claim 21 is patentable over the prior art of record.

Applicants respectfully submit that dependent claims 22 and 23, by similar analysis, are allowable. Each of these claims depends directly from claim 21 and consequently includes the recitations of independent claim 21. As discussed above, Young, whether considered individually or in any permissible combination with any other prior art of record, fails to teach or suggest the recitations of claim 21 and therefore claims 22 and 23 are also allowable. In addition to the recitations of claim 21 noted above, each of these dependent claims includes additional patentable elements.

Turning to the last independent claim, amended claim 24 generally recites a computer-implemented method, comprising classifying software modules into

groups based on types thereof, assigning each software module a static value based on its group, each assigned value having a relative order that is deterministic and static and there being an unassigned value between any two assigned values, and maintaining an association between each software module and its assigned value, and executing at least one software module in its relative order.

The Office action rejected claim 24 as being unpatentable over Young. More specifically, the Office action contends that Young teaches and/or suggests the recitations of claim 24 and cites the rejection of claim 1 as a basis for references to Young. Applicants respectfully disagree.

Applicants submit that the Office action has failed to establish a *prima facie* case for obviousness. Unlike Young, claim 24 recites the assigned values having a relative order and there being an unassigned value between every two assigned values. As clearly pointed out above, Young does not teach this concept as an integer-based counter cannot be construed as having an unassigned value between every two assigned values. Further, the counters in Young may be decremented and this cannot be construed as static as also recited in claim 24.

For at least these reasons, applicants submit that claim 24 is allowable over the prior art of record.

Applicants respectfully submit that dependent claim 25 by similar analysis, is allowable. This claim depends directly from claim 24 and consequently includes the recitations of independent claim 24. As discussed above, Young, whether considered individually or in any permissible combination with any other prior art of

record, fails to teach or suggest the recitations of claim 24 and therefore claim 25 is also allowable over the prior art of record.

For at least these additional reasons, applicants submit that all the claims are patentable over the prior art of record. Reconsideration and withdrawal of the rejections in the Office action is respectfully requested and early allowance of this application is earnestly solicited.

In re Application of GOLDS et al.
Serial No. 09/768,098

CONCLUSION

In view of the foregoing remarks, it is respectfully submitted that claims 1-25 are patentable over the prior art of record, and that the application is in good and proper form for allowance. A favorable action on the part of the Examiner is earnestly solicited.

If in the opinion of the Examiner a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney at (425) 836-3030.

Respectfully submitted,

Albert S. Michalik

Albert S. Michalik, Reg. No. 37,395
Attorney for Applicants
Law Offices of Albert S. Michalik, PLLC
704 - 228th Avenue NE, Suite 193
Sammamish, WA 98074
(425) 836-3030
(425) 836-8957 (facsimile)

In re Application of GOLDS et al.
Serial No. 09/768,098

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this Amendment, along with transmittal and facsimile cover sheet, are being transmitted by facsimile to the United States Patent and Trademark Office in accordance with 37 C.F.R. 1.6(d) on the date shown below:

Date: July 21, 2006

Albert S. Michalik

2630 fourth amendment